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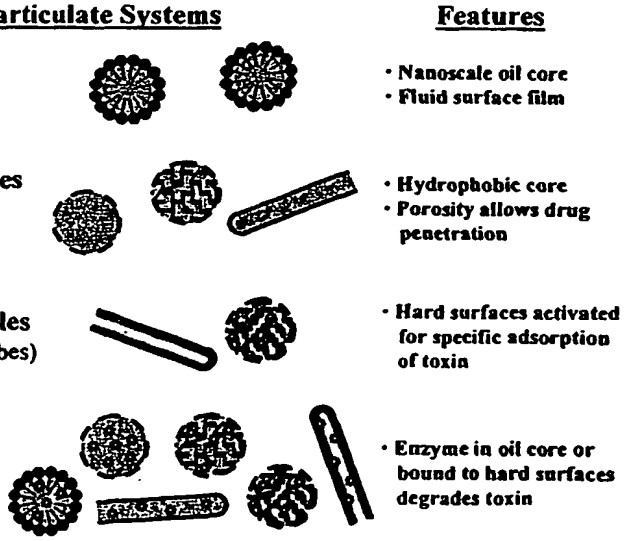
(54) Title: DETOXIFICATION AND DECONTAMINATION USING NANOTECHNOLOGY THERAPY



(57) Abstract: A method for removing a target chemical from a region comprising the steps of: adding nanoparticle to the region and partitioning at least a portion of the target chemical into or onto the bioparticle. A composition comprising bioparticles having a surface adopted for toxic drug attachment is also provided.

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AMENDED CLAIMS

[Received by the International Bureau on 13 November 2002 (13.11.02) ; original claims 1-20 replaced by new claims 1-19 (3 pages)]

1. A particle for removal of a toxic compound from a subject, comprising:

(a) a first region comprising reactive molecules, wherein said reactive molecules act to transform said toxic compound into a substantially inactive compound; and

(b) a second region comprising a material selected to partition said toxic compound from said subject into said second region,

wherein said first region is in contact with at least a portion of said second region.

2. The particle of claim 1, wherein said reactive molecules are enzymes.

3. The particle of claim 2, wherein said enzymes are a genetically cloned enzymes.

4. The particle of any one of claims 1 to 3, wherein said material is hydrophobic.

5. The particle of any one of claims 1 to 4, wherein said second region is an oil core and said first region comprises a reactive molecule dispersed within said oil core, wherein a surface film encapsulates said oil core.

6. The particle of any one of claims 1 to 4, wherein said second region is an liquid core and said first region comprises a reactive molecule dispersed within said liquid core; wherein an inorganic or polymer shell encapsulates said liquid core.

7. The particle of claim 6, wherein said inorganic or polymer shell is porous to said toxic compound.

8. The particle of claim 6, wherein said inorganic or polymer shell contains templated pores.

9. The particle of any one of claims 1 to 4, comprising a hollow tube open at least at one end, wherein said tube comprises an inorganic or polymer material and wherein said first region comprises a hydrophobic compound attached to an inside surface of said tubule and said second region comprises a reactive molecule attached to a surface of said tube.

10. The particle of claim 9, wherein said inorganic material is silica.

11. The particle of any one of claims 9 to 10, wherein said hydrophobic compound is an alkyl compound.

12. The particle of any one of claims 1 to 11, wherein said particle has a size from approximately 1 to 200nm.

13. The particle of claim 12, wherein said particle has a size from approximately 1 to 5nm.

14. The use of the particle of any one of claims 1 to 13 in the manufacture of a medicament for the detoxification of a toxic compound.

15. The use of the particle of any one of claims 1 to 13 in the manufacture of a medicament for the treatment of drug intoxication.